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Regents College Examination Content Guide

Research in Nursing (Baccalaureate Level)

General Description of the Examination

The Research in Nursing examination measures knowledge and understanding of material typically taught in a one-semester, upper-level course in a baccalaureate program. The examination tests for a knowledge and understanding of the research process and the ability to apply this information to critiquing a research study. The content covered on the examination consists of four major categories: foundations of research, quantitative research, qualitative research, and critique of a research report. A knowledge and understanding of statistics is assumed.

You may prepare for this examination by following an independent program of study based on the study materials listed in this guide. This program of study is fully outlined in the *Regents College Course Guide for Research in Nursing*. The course guide is described on page 7, immediately following the content outline.

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EXAMINATIONS**

Use this guide if you are planning to test no later than September 30, 2001.

If you are planning to test on or after October 1, 2001, you should also obtain the revised version of this guide which will be available in late summer 2001. You may access the revised version online at our Web site or request a printed copy by contacting the College.

Examination Objectives

You will be expected to demonstrate the ability to:

1. comprehend ethical issues related to research;
2. apply knowledge of concepts fundamental to quantitative and qualitative research;
3. comprehend the roles and responsibilities of the professional nurse in relation to participation in research and implementation of research findings;
4. evaluate research studies for applicability to nursing practice.

Uses for the Examination

Regents College, the test developer, recommends granting three (3) semester hours of upper-level undergraduate credit to students who receive a score equivalent to a letter grade of C or higher on this examination. This recommendation is endorsed by the American Council on Education. The Research in Nursing examination is one of six written examinations which, along with four performance examinations, comprise the nursing component of the Regents College Bachelor of Science Degree in Nursing. Other colleges and

universities also recognize this examination as a basis for granting credit or advanced standing. Individual institutions set their own policies for the amount of credit awarded and the minimum acceptable score. Before taking the examination, you should check with the institution from which you wish to receive credit to determine whether credit will be granted and/or to find out the minimum grade required for credit.

Examination Length and Scoring

This is a mixed format examination in two parts. It consists of approximately 60 four-option multiple-choice questions, some of which may be unscored, experimental questions, and one (1) four-part free response question. You will have three (3) hours to complete the examination. Since you will not be able to tell which questions are experimental, you should do your best on all of

them. Grades are based on a weighted composite of your answers to the multiple-choice questions and the total rating assigned to the free response question. Your score will be reported as a letter grade. Your score will be mailed to you within three months after the date of your examination.

Examination Administration

The examination is administered by computer at Sylvan Technology Centers® throughout the United States and in Canada, American Samoa, Guam, Puerto Rico, Saipan (Northern Mariana Islands), and the Virgin Islands. The examination is also administered at approved international testing centers. To receive information concerning testing dates, locations, and fees, contact Regents College.

Test Administration
Regents College
7 Columbia Circle
Albany, New York 12203-5159

Phone: (518) 464-8500
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Third-Party Services

Regents College is a nonprofit educational service organization, and has no affiliation with, nor does it endorse or recommend, any profit-making education counseling centers. Initial counseling and advising for college degrees is usually provided **FREE** by degree-

granting institutions. Students wishing to demonstrate college-level learning by taking Regents College Examinations can receive their **FREE** copies of the appropriate content guides by requesting them from Regents College.

Computer-Delivered Testing

If you are testing at a Sylvan Technology Center®, your examination will be delivered by computer. You will enter your answers to the multiple-choice portion of your examination on the computer using either the keyboard or the mouse. For the free response portion, the research study will be presented on a series of labeled screens. You will handwrite your answers in a special answer booklet. You will also receive a paper copy of the critiquing criteria and question directives that you can refer to as you complete the free response portion.

The system used for our computer-delivered testing is designed to be as user-friendly as possible, even for those with little or no computer experience. Instructions provided on-screen are similar to those you would receive in a paper examination booklet. In addition, before the timed portion of your examination begins, you may choose to complete a tutorial that orients you to the computer testing environment and gives you the opportunity to try

each feature before using it in questions that will be scored. You will be instructed in how to use the mouse, the keyboard, and different parts of the screen. We strongly recommend that you take advantage of this tutorial. If you have access to the World Wide Web, you can view the screens that you will see in the tutorial, or actually download a copy of the tutorial to practice with, from the Regents College Web site (www.regents.edu).

To prepare yourself for critiquing a research study that is presented to you on a computer screen, you should practice taking notes on separate scrap paper. You may want to develop a system for indicating what part of the text your note applies to without being able to annotate the text itself. To help you, every screen of the research study will be numbered and will have other features designed to help you find your way around. If possible, spend some time reading from a computer workstation if this is not something you are accustomed to doing.

Content Outline

The major content areas on the examination and the number of questions devoted to each content area are listed below.

CONTENT AREA	NUMBER OF QUESTIONS ON THE EXAMINATION
I. Foundations of Research — multiple-choice	25
II. Quantitative Research — multiple-choice	25
III. Qualitative Research — multiple-choice	10
IV. Critique of a Research Study — free response	1

Note: The chapter numbers and titles provided within the content outline below refer to specific chapters in the recommended textbook for this examination (see page 13, Study Materials). Chapter numbers and titles may differ in subsequent editions.

I. Foundations of Research (25 questions)

LoBiondo-Wood & Haber (1998):

- Chapter 1, The Role of Research in Nursing
- Chapter 2, Overview of the Research Process
- Chapter 3, Research Problems and Hypotheses
- Chapter 4, Literature Review
- Chapter 5, Theoretical Framework
- Chapter 11, Legal and Ethical Issues
- Chapter 19, Use of Research in Practice

A. Ethical considerations (Chapter 11)

- 1. Protection of human subjects
 - a. Informed consent
 - 1) Elements of informed consent (for example: confidentiality, anonymity, may refuse to participate without penalty)
 - 2) Written, oral, or implied consent
 - b. Institutional review boards (for example: at hospitals, at universities)
 - c. Vulnerable subjects (for example: children, people who are terminally ill)
 - d. Recruitment of subjects
 - e. Concealment

2. Historical background
 - a. Nazi medical experiments
 - b. Tuskegee syphilis study
3. Researcher misconduct (for example: unauthorized research, scientific fraud, deception)
4. Professional ethics research guidelines
 - a. *Nuremberg code*
 - b. *Belmont Report*
 - c. *Human Rights Guidelines for Nurses in Clinical and Other Research* (ANA, 1975)

B. Overview of the research process (Chapters 1 and 2)

1. Importance of nursing research to professional nursing practice (for example: explosion of knowledge, professional accountability)
2. Role of the nurse in research based on the nurse's educational preparation (for example: at the baccalaureate level, to read research critically and to use existing standards to determine readiness of research for utilization in clinical practice)
3. Evolution of nursing research
 - a. Past, present, and future trends (for example: shift from research on nursing education to research on nursing practice)
 - b. Research priorities within the nursing profession
4. Characteristics of the scientific approach
5. Inductive vs. deductive reasoning (Chapter 5, pp. 136–138)
6. Basic vs. applied research
7. Quantitative vs. qualitative research — research beliefs, activities, and questions (Chapter 3)
8. Content and organization of research reports

C. Research utilization (Chapter 19)

1. Barriers to using research in clinical practice
2. Strategies to overcome barriers
3. Responsibility for using valid research findings in clinical practice (responsibility of the researcher, the clinical practitioner, and the nurse administrator)
4. Research utilization process
5. Criteria for research utilization
 - a. Clinical relevance
 - b. Scientific merit
 - c. Implementation potential (for example: feasibility for use in practice, risk/benefit ratio)
 - d. Replication
6. Landmarks of research utilization
 - a. Agency for Health Care Policy and Research (AHCPR)
 - b. Conduct and Use of Research in Nursing (CURN) project
 - c. National Child Assessment Satellite Training (NCAT)
 - d. National Institute of Nursing Research (NINR)
 - e. Stetler utilization model
 - f. Western Interstate Commission for Higher Education (WICHE) project

D. Review of the literature (Chapters 4 and 5)

1. Conducting a literature search
 - a. Library activities (for example: use of computer databases, such as Cumulative Index to Nursing and Allied Health Literature [CINAHL])
 - b. Primary vs. secondary sources
2. Purposes of a literature review (for example: as a basis for every stage of the research process, such as specifying the problem, evaluating the problem, identifying the variables, and developing the methodology)

3. Theoretical/conceptual framework for study (for example: purpose of the theoretical/conceptual framework; difference among concepts, constructs, and theories; differences between conceptual and operational definitions)
4. Characteristics of a well-written literature review

E. The research problem (Chapter 3)

1. Sources of research problems (for example: nursing practice, prior research)
2. Development and refinement of a research problem
3. Criteria for evaluation of a research problem
 - a. Significance to nursing
 - b. Testability
 - c. Feasibility
4. Statement of a research problem
 - a. Forms of the statement — interrogative and declarative
 - b. Characteristics of a well-written problem statement
5. The research problem in quantitative research vs. in qualitative research

II. Quantitative Research (25 questions)

LoBiondo-Wood & Haber (1998):

Chapter 3, Research Problems and Hypotheses

Chapter 6, Introduction to Design

Chapter 7, Experimental and Quasiexperimental Designs

Chapter 8, Nonexperimental Designs

Chapter 10, Sampling

Chapter 12, Data Collection Methods

Chapter 13, Reliability and Validity

Chapter 14, Descriptive Data Analysis

Chapter 15, Inferential Data Analysis

Chapter 16, Analysis of the Findings

A. Hypothesis (Chapter 3)

1. Relationship among research problem, theory, and hypothesis
2. Appropriate use of hypothesis and appropriate use of research question
3. Characteristics of a research hypothesis
 - a. Independent variable
 - b. Dependent variable
 - c. Population
 - d. Relationship statement
 - e. Testability
4. Types of hypotheses
 - a. Statistical (null) and research
 - b. Directional and nondirectional
5. Testing the null hypothesis (Chapter 15, pp. 370–376)
 - a. Level of significance
 - b. Type I error
 - c. Type II error
6. Statistical vs. practical significance

B. Research design (Chapters 6, 7, and 8)

1. Experimental designs
 - a. Purposes
 - b. Characteristics
 - 1) Manipulation of independent variable(s)
 - 2) Control
 - 3) Random assignment
 - c. Types
 - 1) True or classic experiment
 - 2) Solomon four-group design
 - 3) After-only experimental design
 - d. Advantages and disadvantages
2. Quasi-experimental designs
 - a. Purposes
 - b. Characteristics (for example: nonrandom assignment)

- c. Types
 - 1) Nonequivalent control group design
 - 2) After-only nonequivalent control group design
 - 3) Time series design
 - d. Advantages and disadvantages
3. Nonexperimental designs
- a. Purposes
 - b. Characteristics (for example: naturally occurring groups, no investigator manipulation)
 - c. Types
 - 1) Descriptive/exploratory survey studies
 - 2) Interrelationship studies
 - (a) Correlational
 - (b) Ex post facto
 - (c) Cross-sectional and longitudinal
 - (d) Retrospective and prospective
 - d. Advantages and disadvantages
4. Design validity
- a. Internal validity
 - b. External validity
 - c. Threats to validity (for example: Hawthorne effect, attrition/mortality, maturation, history, selection)
5. Strategies to control for extraneous variables

C. Sampling (Chapter 10)

- 1. Types of populations
 - a. Target
 - b. Accessible

- 2. Types of samples
 - a. Probability
 - 1) Simple random
 - 2) Stratified random
 - 3) Cluster
 - 4) Systematic
 - b. Nonprobability
 - 1) Convenience
 - 2) Quota
 - 3) Purposive
- 3. Determination of sample size (for example: power analysis, accessibility of subjects, cost)
- 4. Strategies for randomization (for example: use of table of random numbers)
- 5. Random sampling from a population vs. random assignment to a group
- 6. Criteria for evaluating the sample (for example: representativeness, selection bias)

D. Data collection (Chapters 12 and 13)

- 1. Appropriate use of data collection methods in relation to problem statement and design
- 2. Data collection methods
 - a. Physiological or biological
 - b. Observation
 - c. Interviews and questionnaires (for example: open-ended; closed-ended, such as Likert scales)
 - d. Records or available data
- 3. Instrument reliability and validity
 - a. Reliability
 - 1) Stability (for example: test-retest reliability, parallel or alternate forms)
 - 2) Homogeneity (for example: item-total correlation, split-half reliability, Kuder-Richardson coefficient, Cronbach's alpha)

- 3) Equivalence (for example: parallel or alternate forms, interrater reliability)
- b. Validity
 - 1) Content
 - 2) Criterion-related
 - 3) Construct

- 4. Advantages and disadvantages of data collection methods

E. Data analysis/interpretation (Chapters 14, 15, and 16)

- 1. Levels of measurement
 - a. Nominal
 - b. Ordinal
 - c. Interval
 - d. Ratio
- 2. Descriptive statistics — situationally describing variables
 - a. Frequency distributions (normal, skewed, bimodal)
 - b. Measures of central tendency (mean, median, mode)
 - c. Measures of variability (percentages, range, standard deviation)
- 3. Correlational statistics — measuring strength of a relationship
 - a. Pearson r
 - b. Multiple regression
 - c. Factor analysis

- 4. Inferential statistics — testing differences between variables
 - a. Parametric (for example: t tests, analysis of variance [ANOVA])
 - b. Nonparametric (for example: chi-square)
- 5. Relationship among variable, its level of measurement, and choice of statistics

III. Qualitative Research (10 questions)

LoBiondo-Wood & Haber (1998):
Chapter 9, Qualitative Approaches to Research

A. Topics appropriate for study

B. Types of qualitative research

- 1. Ethnography
- 2. Phenomenology
- 3. Historical method
- 4. Grounded theory

C. Data gathering and data analysis

- 1. Coding
- 2. Search for themes (for example: central meanings, domains)
- 3. Constant comparative method
- 4. External and internal criticism of historical documents
- 5. Data saturation
- 6. Bracketing

D. Criteria for establishing rigor

IV. Critique of a Research Study (1 free response question)

The material in content areas I–III serves as a foundation for the content covered in area IV. The student is expected to apply appropriate material in content areas I–III in critiquing an abbreviated research study. For content area IV, the student will respond to one (1) four-part free response question, worth a maximum of 20 points. The question will involve reading an abbreviated version of a research study and using a set of directives to guide the response. The research study is presented on the computer screen. The response will be written in a separate answer booklet especially designed for the Research in Nursing–BSN examination.

In addition to the directives for each part of the response, the student will be given criteria for critiquing a research study and instructed to use them as a guide for the analysis and evaluation of the research study. Material similar to the Instructions to Guide the Student's Response to the Free Response Question section at the right will be provided on a separate reference card at the testing center.

The report presented will be a quantitative research study dealing with a common clinical nursing topic and will include all of the major sections that would be included in a research report published in a nursing

research journal. An example of a research study is included in the Sample Questions section of this guide. The student is to assume that the rights of the subjects have been ensured and that informed consent has been obtained, that the statistical test(s) is(are) appropriate, and that the statistical data are calculated correctly.

Instructions to Guide the Student's Response to the Free Response Question:

Critically appraise the quantitative research study [see example on p. 10]. The report is an abbreviated version of a fictitious research study. It includes all of the major sections that would be included in a research report published in a nursing research journal.

Use the twelve (12) criteria for critiquing a research study that follow to guide your analysis and evaluation. Fully address each of the four (4) directives found on the next page, using the special answer booklet that has been provided. Include details from the study to support your response.

Assume that the rights of subjects have been ensured and that informed consent has been obtained. Also assume that the statistical test(s) is(are) appropriate and that the statistical data are calculated correctly. However, do not assume that the researcher's interpretation of the findings is accurate.

Criteria for Critiquing a Research Study

1. The problem statement or purpose clearly identifies the variables, expresses the relationship between the variables, specifies the population, implies the possibility of empirical study, and indicates significance for nursing.
2. The review of the literature consists mainly of current sources, mainly of primary sources, addresses the relevant variables, and describes gaps in information pertaining to the problem.
3. The theoretical/conceptual connection between the variables is evident.
4. The hypothesis or research question is properly stated and is consistent with the problem statement.
5. The sample size is sufficient, the sample is representative of the target population, and selection biases are controlled.
6. The type of research design is appropriate for solving the problem.
7. Threats to internal validity are minimized.
8. The method of data collection is appropriate for the research problem, the sample, and the research design.
9. The instruments chosen to collect data are appropriate to measure the variables and show evidence of reliability and validity.
10. The interpretation of the data analysis is consistent with the results presented.
11. The discussion of the results is in the context of the theoretical/conceptual framework and/or the literature review.
12. The conclusions are within the scope of the findings.

Directives

1. Identify the two (2) variables being studied and label them as independent or dependent. Indicate the type of quantitative design used (i.e., experimental, quasi-experimental, or nonexperimental) (2 points)
2. Identify three (3) distinct strengths of the research study. Each strength must relate to a different critiquing criterion. Explain why they are strengths, using your knowledge of the research process and details from the research study to support your reasoning. (6 points)
3. Identify three (3) distinct weaknesses of the research study. Each weakness must relate to a different critiquing criterion. Explain why they are weaknesses, using your knowledge of the research process and details from the research study to support your reasoning. (6 points)

NOTE: Several of the criteria have multiple parts. You may use part of a single criterion as a strength and another part of the same criterion as a weakness. However, you may not use the same criterion for more than one strength or more than one weakness.

4. Apply research utilization concepts by doing the following: (Total — 6 points)
 - A. Present a logical conclusion about whether or not the strengths outweigh the weaknesses in importance. Provide a rationale to support your conclusion. Your rationale must identify which strengths or weaknesses you determine to be most significant. Consider the strengths and weaknesses of the entire study, not just those cited in your response to Directives 2 and 3. (2 points)
 - B. Based on your critique of this study, discuss whether or not you would utilize the findings of the study to either support or change nursing practice. Provide a rationale supporting your decision. (2 points)
 - C. Independent of the findings of the study, discuss the importance of this research problem to nursing practice. Provide a rationale supporting your position. (2 points)

Course Guide for the Research in Nursing Examination

The examination development committee strongly recommends that you order the Regents College *Course Guide for the Research in Nursing Examination* for additional guidance in preparing for this exam.

The course guide will help you structure your own examination preparation. It is designed to help you learn the content of this examination. The guide is part of an integrated guided learning package. It includes study suggestions and approaches for learning the content of the examination and for critiquing a research study. It will direct you on how to best use the recommended resources. (See the Recommended Resources section, page 13.)

Achieving success on the free response portion of the Research in Nursing examination requires more than just learning content. You must also be able to convey your understanding of that content through the writing of effective critiques of research studies. The free response portion of this examination requires you to identify and describe the parts of research designs, differentiate among strengths and weaknesses, justify your descriptions with supporting detail from the studies, and evaluate the worth of the study.

The course guide can be purchased only from the Regents College Bookstore. The Study Materials section (pages 13–15) provides information on how to order this publication.

Sample Questions

The questions that follow illustrate those typically found on this examination. These sample questions are included to familiarize you with the type of questions you will find on the examination. The answers can be found on the inside back cover of this guide.

1. Which statement reflects an accepted guideline for informed consent?
 - 1) The consent form should describe potential risks or discomforts to the subject.
 - 2) The primary researcher should obtain written consent from the research subjects.
 - 3) All subjects should be financially compensated for participation in a study.
 - 4) The researcher should not be expected to answer subjects' questions about the study.
2. A nurse systematically observes that infants in the neonatal intensive care unit tend to cry more at the change of shift. The nurse begins to formulate a theory relating sensory overload to central nervous system immaturity of infants. Which type of reasoning does the nurse's thinking illustrate?
 - 1) deductive
 - 2) inductive
 - 3) intuitive
 - 4) trial-and-error
3. Why was the conversion of the National Center for Nursing Research (NCNR) to the National Institute of Nursing Research (NINR) in 1993 such an important event in promoting research in nursing?
 - 1) Nursing was recognized as a profession equal to medicine.
 - 2) The agency was given the status of other national health institutes.
 - 3) Large studies not requiring replication were able to be funded.
 - 4) Funds were available for addressing local health problems.
4. Which best describes a well-written literature review?
 - 1) It consists of exact quotations of relevant content.
 - 2) It contains an equal number of primary and secondary sources.
 - 3) It concludes with the author's opinion.
 - 4) It identifies gaps and inconsistencies in information.
5. Which reference is most likely to be a primary source?
 - 1) critical evaluation of a theory
 - 2) monograph on educational perspectives
 - 3) doctoral dissertation
 - 4) textbook on clinical skills
6. Which activity is a component of research problem development and refinement?
 - 1) data collection
 - 2) instrument selection
 - 3) literature review
 - 4) qualitative data analysis
7. Which type of hypothesis is the following statement: "Clients who receive preoperative instruction perceive their hospitalization more positively than do clients who do not receive preoperative instruction"?
 - 1) complex
 - 2) directional
 - 3) nondirectional
 - 4) statistical

8. While a researcher is conducting a study comparing shift structure and job satisfaction, a new nurse manager is hired on one of the units participating in the study. Which threat to internal validity may influence the findings of this study?
 - 1) history
 - 2) mortality
 - 3) selection bias
 - 4) testing
9. A researcher is interested in studying the attitudes of ICU nurses toward removing life support from clients who are terminally ill. To obtain the sample, the researcher chooses every third nurse employed in all of the ICUs in the hospital. Which sampling method is the researcher using?
 - 1) cluster
 - 2) quota
 - 3) simple
 - 4) systematic
10. What should the researcher consider when determining how large a sample should be?
 - 1) sites from which the sample will be selected
 - 2) number of individuals collecting data from the sample subjects
 - 3) convenience of the sampling
 - 4) the study design and power analysis
11. What is an advantage of using questionnaires as compared to using interviews?
For the same cost, with questionnaires the researcher can
 - 1) achieve a greater depth of information.
 - 2) seek clarification of subjects' answers.
 - 3) obtain a higher number of responses.
 - 4) control the order in which subjects respond.
12. The Celsius temperature scale represents which level of measurement?
 - 1) interval
 - 2) nominal
 - 3) ordinal
 - 4) ratio
13. Which research topic is appropriate for a qualitative study?
 - 1) the relationship of prenatal care to Apgar scores of newborns
 - 2) the experience of delivering a stillborn infant at term
 - 3) the number of clients with contraceptive failures who attend a prenatal clinic in one year
 - 4) the relationship of self-esteem to maternal attachment in adolescents
14. Which qualitative research method would be most appropriate for a study of the health behavior patterns of older African American adults living in rural areas?
 - 1) ethnography
 - 2) phenomenology
 - 3) grounded theory
 - 4) historical method
15. What is the purpose of establishing scientific rigor in qualitative research?
 - 1) to maintain external validity
 - 2) to provide instrument reliability
 - 3) to allow creative design
 - 4) to determine accuracy of interpretations

Sample Research Study

A Randomized Clinical Trial of the Effect of Noise on the Anxiety of Anesthetized Surgical Clients (Date of first publication: 1996)

Introduction and Literature Review¹

High levels of noise have been linked to psychological distress such as sleeplessness, anxiety, nervousness, and nightmares in hospitalized clients (1–3). Falk found that sound levels over 80 decibels (dB) cause cochlea damage and hearing loss in adults (4). Anesthetized surgical clients are especially at risk from noise exposure up to 108 dB from conversations, intercoms, monitoring devices, and suctioning equipment (1,5). Although the goal of anesthesia is to provide amnesia and pain control (3,6), the auditory system may still register harmful input (1–3,6–8).

Surgical anxiety, stemming from unfamiliar environments, can disrupt clients' recovery by reducing their psychological well-being and their ability to cooperate with self-care activities. Nursing care of surgical clients requires interventions that address physiological and psychological needs (9). Music or white noise (for example, repetitive sounds such as ocean surf) can block annoying sounds and enhance sleep and relaxation for intensive care unit clients (10), and decrease anxiety (11,12) and blood pressure (13) for surgical clients. Introducing white noise to anesthetized clients could help clients assimilate the environment and strengthen their defenses against stressors (9,10). The purpose of this study was to examine the effect of white noise on the postoperative anxiety of anesthetized clients exposed to typical noise encountered in operating rooms.

Methods

All males between 18 and 60 years old who were scheduled to have elective hernia repair were invited to participate. Clients were excluded from the study if they could not speak English; had hearing impairment; or had cerebrovascular disease, drug addiction, or psychiatric disorders. Eligible subjects were randomly assigned to either the experimental group who heard white noise throughout the surgery or the control group who did not. Anxiety was measured presurgery and again two days following discharge using Spielberger's State-Trait Anxiety Inventory (STAI). The STAI, a forty-item self-report instrument used to measure anxiety in general (trait) and at a particular point in time (state), is reported to be reliable and valid (11,14,15). Internal consistency has been reported to range from .83 to .92 (15). Analysis of presurgery STAI scores determined baseline equality between groups. Earphones were placed on all subjects prior to administration of anesthesia. Subjects were blinded to their treatment with white noise. The control group's earphones were removed immediately after anesthetization. The experimental group listened to comfortable volumes of tape recordings of ocean surf. All clients were asked to return the STAI two days following surgery. A *t* test was used to test the hypothesis that anesthetized surgical clients exposed to white noise via earphones would report less postoperative anxiety, as measured by STAI, than clients exposed to surgical noise with no external interference.

Results

Ten white males who were between 45 and 57 years old, were undergoing elective hernia repair surgery, and met selection criteria agreed to participate and were equally randomized to each group. All clients were treated as outpatients, averaging two hours in surgery and four hours in recovery. The average level of operating room noise was 95 dB, with ranges from 66 to 117 dB. There was no difference in preoperative anxiety level between the experimental and control groups. No statistically significant differences were found between group postoperative STAI scores $p > .05$). Both groups reported experiencing high levels of anxiety during the surgical period (see Table 1).

Discussion

Anxiety can disrupt recovery of surgical clients since it interferes with participation in self-care activities necessary for healing. Although adverse effects of noise levels are well documented (1–3,6,7) and music is known to interfere with the interpretation of noise (10–13), results from this study indicate that white noise used to interfere with auditory stimuli in the operating room does not affect anxiety levels of anesthetized clients. Anesthetized clients are completely dependent on the operating room nurse to intervene with appropriate measures to decrease the effect of stressors (9). Owing to the many ramifications of noise on potential postoperative anxiety, it is in the best interest of all surgical clients for nurses to continue to use other preventive measures, because white noise is an ineffective intervention.

¹Numbers in parentheses refer to the numbered list of references found at the end of the study.

TABLE 1

Means and Standard Deviations for State-Trait Anxiety Inventory (STAI) Scores: Baseline and Two Days Following Surgery (N=10)

	Experimental Group n=5	Control Group n=5
Baseline STAI		
State-Anxiety		
Mean	46.37	45.00
SD	9.34	11.23
Trait-Anxiety		
Mean	44.39	43.69
SD	10.81	11.59
Two-day STAI		
State-Anxiety		
Mean	40.03	42.07
SD	9.22	9.34
Trait-Anxiety		
Mean	44.02	43.63
SD	8.49	10.06

References for

A Randomized Clinical Trial of the Effect of Noise on the Anxiety of Anesthetized Surgical Clients (Date of first publication: 1996)

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5. Hodge, B., & Thompson, J.F. (1990). Noise pollution in the operating theatre. *Lancet*, 335, 891–894.
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8. Ghoneim, M., & Block, R. (1993). Learning during anesthesia. *International Anesthesiology Clinics*, 4, 39–51.
9. George, J. (1990). *Nursing theories: The base for professional nursing practice* (3rd ed.). Englewood, NJ: Appleton & Lange.
10. Williamson, J. (1991). The effects of ocean sounds on sleep after coronary artery bypass graft surgery. *American Journal of Critical Care*, 1(1), 91–97.
11. Evans, M.M., & Rubio, P. (1994). Music: A diversionary therapy. *Today's OR Nurse*, 16(4), 17–22.
12. Cirina, C. (1994). Effects of sedative music on patient preoperative anxiety. *Today's OR Nurse*, 16(3), 15–18.
13. Stevens, K. (1990). Patient's perceptions of music during surgery. *Journal of Advanced Nursing*, 15, 1045–1051.
14. Palakanis, K., DeNobile, J., Sweeney, B., & Blakenship, C. (1994). Effect of music therapy on state anxiety in patients undergoing flexible sigmoidoscopy. *Diseases of the Colon and Rectum*, 37(5), 478–481.
15. Spielberger, C. (1970). *Manual for state-trait anxiety inventory*. Palo Alto, CA: Consulting Psychologists Press, Inc.

Study Materials

The textbook listed below, in conjunction with its study guide and the Regents College course guide, is recommended by the examination development committee as the most appropriate resource package to use in preparing for the examination.

The Regents College Bookstore stocks the course guide and the current editions of selected textbooks for all examinations. In some cases, current editions will be more recent than those listed in this guide. The Bookstore also offers resources in areas such as study strategies, personal planning, and stress reduction. See the separate flyer for further information about purchasing textbooks or other resources through the Bookstore.

You may also find textbooks in college libraries, schools of nursing, medical schools, and hospitals. Public libraries may have some of the textbooks or may be able to obtain them through an interlibrary loan program.

You should allow sufficient time to obtain resources and to study before taking the examination.

Electronic Peer Network

Enrolled Regents College students are eligible to join the Regents College Electronic Peer Network (EPN). The EPN is a Web-based environment that enables Regents College students to interact academically and socially. As an EPN member, you will be able to locate a study partner, join an online study group for your exam,

chat in real-time with other students, and access other resources that may be helpful to students preparing for Regents College Examinations. Enrolled students can join the EPN by visiting the Regents College home page and clicking on Electronic Peer Network.

Online Study Services

Regents College online study services provide enrolled and prospective students with access to subject matter experts. These services are available on a fee-for-service basis and currently assist students with writing and statistics. Please email requests for more information about these services to the appropriate address: rcwrite@regents.edu or rcstats@regents.edu or call Learning Services at 888-647-2388 (press 1-4-4 at the greeting). You may email suggestions for new online study services to rclearn@regents.edu.

Virtual Library

The Regents College Virtual Library (RCVL) is an online library designed for distance learners. The RCVL (<http://www.library.regents.edu>) provides access to a variety of resources such as journal articles, books, Web sites, databases, and reference services. These resources can help you prepare for Regents College Examinations. While some library services are restricted to enrolled students, many are not. To access the RCVL, visit the Regents College home page.

Recommended Resources

The examination development committee used the LoBiondo-Wood & Haber textbook below as the basis for developing the examination. Students are encouraged to use this text in conjunction with its study guide and computerized learning resource and the Regents College course guide to prepare for the examination.

LoBiondo-Wood, G., & Haber, J. (1998). *Nursing research: Methods, critical appraisal, and utilization* (4th ed.). St. Louis: Mosby.

Rose-Grippa, K., & Gorney-Moreno, M.J. (1998). *Study guide and computerized learning resource to accompany Nursing research: Methods, critical appraisal, and utilization* (4th ed.). St. Louis: Mosby.

Regents College. (1999). *Course guide for Research in Nursing*.

Journal Articles

As a professional, you have a responsibility to continue your education. One way to keep current is by reading journal articles. You can gain exposure to current articles in the field by subscribing to one or two journals or using the journals found in college or public libraries. Journal articles are an especially important supplementary resource as you prepare to take the Research

in Nursing (BSN) examination, because they will provide practice in reading and understanding nursing research studies.

The articles listed below are arranged according to the content area to which they most apply. You are encouraged to read widely and review other articles of interest.

I. Foundations of Research

- Alt-White, A.C. (1995). Issues in clinical nursing research: Obtaining informed consent from the elderly. *Western Journal of Nursing Research*, 17(6), 700–705.
- Behe, R. (1995). The individual's right to informed consent. *Nurse Researcher*, 3(1), 14–23.
- Berry, D.L. et al. (1996). Ethical issues: Informed consent: Process and clinical issues. *Oncology Nursing Forum*, 23(3), 507–512.
- Bruette, V., & Fitzig, C. (1993). The literature review. *Journal of the New York State Nurses Association*, 24(1), 14–15.
- Demi, A.S., & Warren, N.A. (1995). Issues in conducting research with vulnerable families. *Western Journal of Nursing Research*, 17(2), 188–202.
- Funk, S.G. et al. (1995). Administrators' views on barriers to research utilization. *Applied Nursing Research*, 8(1), 44–49.
- Hallaway, I., & Wheeler, S. (1995). Ethical issues in qualitative nursing research. *Nursing Ethics: An International Journal for Health Care Professionals*, 2(3), 223–232.
- Hutchinson, S.A. et al. (1994). Benefits of participating in research interviews. *Image: Journal of Nursing Scholarship*, 26(2), 161–164.
- Kachajeanos, M.K. (1995). Keys to research: Ethical perspectives on research involving healthy children. *American Journal of Maternal Health Nursing*, 20(5), 285.
- Larsen, E. (1994). Exclusion of certain clinical groups from clinical research. *Image: Journal of Nursing Scholarship*, 26(3), 185–190.
- Madjar, I., & Higgins, I. (1996). Of ethics committees and protocols, behaving ethically in the field: A case study of research with elderly residents in a nursing home. *Nursing Inquiry*, 3(3), 130–137.
- Martin, P.A. (1994). The utility of the research problem statement. *Applied Nursing Research*, 7(1), 47–49.
- Martin, P.A. (1994). Responsibilities when a patient is a subject in a research study. *Applied Nursing Research*, 7(3), 158–161.
- Martin, P.A. (1995). Finding time for research. *Applied Nursing Research*, 8(3), 151–153.
- Martin, P.A. (1995). Recruitment of research subjects. *Applied Nursing Research*, 8(1), 50–54.
- Robley, L.R. (1995). The ethics of qualitative nursing research. *Journal of Professional Nursing*, 11(1), 45–48.
- Tierney, A. (1995). The role of research ethics committees. *Nurse Researcher*, 3(1), 43–52.

II. Quantitative Research

- Abrams, K.R., & Scragg, A.M. (1996). Quantitative methods in nursing research. *Journal of Advanced Nursing*, 23(5), 1008–1015.
- Barriball, K.L. et al. (1996). The telephone survey method: A discussion paper. *Journal of Advanced Nursing*, 24(1), 115–121.
- Blacktop, J. (1996). A discussion of different types of sampling techniques. *Nurse Researcher*, 3(4), 5–15.
- Coates, V.E. (1995). Measuring constructs accurately: A prerequisite to theory testing. *Journal of Psychiatric and Mental Health Nursing*, 2(5), 287–293.
- Fielding, N. (1994). Varieties of research interviews. *Nurse Researcher*, 1(3), 4–13.
- Kirchoff, K.T., & Dille, C.A. (1994). Issues in intervention research: Maintaining integrity. *Applied Nursing Research*, 7(1), 32–46.
- Newel, R. (1996). The reliability and validity of samples. *Nurse Researcher*, 3(4), 16–26.
- Newel, R. (1994). The structured interview. *Nurse Researcher*, 1(3), 14–23.
- Rose, K. (1994). Unstructured and semi-structured interviews. *Nurse Researcher*, 1(3), 23–32.
- Rudy, E.B., & Keir, M. (1991). Unraveling the mystique of power analysis. *Heart & Lung: Journal of Critical Care*, 20(5), 517–522.
- Stokes, S.A. (1994). Selection of a research instrument: Revisiting issues. *Journal of Professional Nursing*, 10(6), 334.
- Yarandi, H.N. (1996). Hypothesis testing. *Clinical Nurse Specialist*, 10(4), 186–188.

III. Qualitative Research

- Bailey, P.H. (1996). Assuring quality in narrative analysis. *Western Journal of Nursing Research*, 18(2), 186–194.
- Beck, C.T. (1996). Grounded theory: Overview and application in pediatric nursing. *Issues in Comprehensive Pediatric Nursing*, 19(1), 1–15.
- Begley, C.M. (1996). Using triangulation in nursing research. *Journal of Advanced Nursing*, 24(1), 122–128.
- Crowder, E.L.M. (1995). What it means to be a nurse historian. *Reflections*, 21(1), 13.
- Gallo, K. et al. (1996). Search and research: Qualitative research: The search for meaning. *Journal of the American Academy of Nurse Practitioners*, 8(4), 167–173.
- Hamilton, D.B. (1993). The idea of history and the history of ideas. *Image: Journal of Nursing Scholarship*, 25(1), 45–48.
- Parse, R.R. (1996). Building knowledge through qualitative research: The road less traveled. *Nursing Science Quarterly*, 9(1), 10–16.
- Sandelowski, A. (1995). Focus on qualitative methods: Sample size in qualitative research. *Research in Nursing and Health*, 18(2), 179–183.

IV. Critique of a Research Study

- Albes, L.L., & Murphy, P.A. (1993). Evaluation of research studies: Statistical significance testing. *Journal of Nurse-Midwifery*, 38(1), 51–53.
- Beck, C.T. (1994). Statistical power analysis in pediatric nursing research. *Issues in Comprehensive Pediatric Nursing*, 17(2), 73–80.
- Firly, A. (1995). Critiquing the ethical aspects of a study. *Nurse Researcher*, 3(1), 35–42.
- Giugge, M. (1995). Reading research critically: Assessing the validity and reliability of research instrumentation. *Journal of Post Anesthesia Nursing*, 10(2), 107–112.
- Haughey, B.B. (1994). Evaluating quantitative research designs. *Critical Care Nurse*, 14(6), 69–72.

Notes

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Key To Sample Questions

Question	Key	Content Area ¹	Question	Key	Content Area ¹
1	1	IA	9	4	IIC
2	2	IB	10	4	IIC
3	2	IC	11	3	IID
4	4	ID	12	1	III E
5	3	ID	13	2	IIIA
6	3	IE	14	1	IIIB
7	2	IIA	15	4	IIID
8	1	IIB			

¹Content Area refers to the location of the question topic in the content outline.

Regents College Written Examinations

The following is a list of examinations scheduled to be offered during 2000–2001:

Arts and Sciences Examinations

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Arts and Sciences Guided Learning Packages

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Life Span Developmental Psychology
Microbiology
Religions of the World
Research Methods in Psychology
Statistics
World Population

Business Examinations

Business Policy & Strategy
Human Resource Management
Labor Relations
Organizational Behavior
Production/Operations Management

Education Examination

Reading Instruction in the Elementary School

Nursing Examinations

Associate Degree:
Differences in Nursing Care: Area A (*modified*)
Differences in Nursing Care: Area B
Differences in Nursing Care: Area C
Fundamentals of Nursing
Maternal & Child Nursing (*associate*)
Maternity Nursing
Nursing Concepts 1
Nursing Concepts 2
Nursing Concepts 3
Occupational Strategies in Nursing

Nursing Examinations

Baccalaureate Degree:
Adult Nursing
Health Restoration: Area I
Health Restoration: Area II
Health Support A: Health Promotion & Health Protection
Health Support B:
Community Health Nursing
Maternal & Child Nursing (*baccalaureate*)
Professional Strategies in Nursing
Psychiatric/Mental Health Nursing

Nursing Guided

Learning Package
Baccalaureate Degree:
Research in Nursing

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